



Phase II and Phase III Archeological Database and Inventory

Site Number: 18FR333

Site Name: Catocin Stack 2 Casting Shed

Prehistoric ☐

Other name(s)

Historic ☒

Unknown ☐

Brief Description:

late 19th-early 20th century iron furnace stack and casting shed

Site Location and Environmental Data:

Latitude 39.5787 Longitude -77.4283

Elevation m Site slope

Site setting

-Site Setting restricted

-Lat/Long accurate to within 1 sq. mile, user may need to make slight adjustments in mapping to account for sites near state/county lines or streams

Maryland Archeological Research Unit No. 17

SCS soil & sediment code Ma

Physiographic province Blue Ridge

Terrestrial site ☒

Underwater site ☐

Ethnobotany profile available ☐ Maritime site ☐

Nearest Surface Water

Name (if any) Little Hunting Creek

Saltwater

Ocean ☐

Estuary/tidal river ☐

Tidewater/marsh ☐

Spring ☐

Minimum distance to water is 240 m

Freshwater

Stream/river ☒

Swamp ☐

Lake or pond ☐

Temporal & Ethnic Contextual Data:

Paleoindian site ☐

Woodland site ☐

Archaic site ☐

MD Adena ☐

Early archaic ☐

Early woodland ☐

Middle archaic ☐

Mid. woodland ☐

Late archaic ☐

Late woodland ☐

Unknown prehistoric context ☐

Contact period site ☐ ca. 1820 - 1860 ☐

ca. 1630 - 1675 ☐ ca. 1860 - 1900 ☐

ca. 1675 - 1720 ☐ ca. 1900 - 1930 ☐

ca. 1720 - 1780 ☐ Post 1930 ☐

ca. 1780 - 1820 ☐

Unknown historic context ☐

Unknown context ☐

Ethnic Associations (historic only)

Native American ☐

Asian American ☐

African American ☐

Unknown ☐

Anglo-American ☐

Other ☐

Hispanic ☐

Y=Confirmed, P=Possible

Site Function Contextual Data:

Prehistoric

Multi-component ☐ Misc. ceremonial ☐

Village ☐ Rock art ☐

Hamlet ☐ Shell midden ☐

Base camp ☐ STU/lithic scatter ☐

Rockshelter/cave ☐ Quarry/extraction ☐

Earthen mound ☐ Fish weir ☐

Cairn ☐ Production area ☐

Burial area ☐ Unknown ☐

Other context ☐

Historic

Urban/Rural? Rural ☐

Domestic

Homestead ☐

Farmstead ☐

Mansion ☐

Plantation ☐

Row/townhome ☐

Cellar ☐

Privy ☐

Industrial

Mining-related ☐

Quarry-related ☐

Mill ☐

Black/metalsmith ☐

Furnace/forge ☒

Other ☒ blast furnace

Transportation

Canal-related ☐

Road/railroad ☐

Wharf/landing ☐

Maritime-related ☐

Bridge ☐

Ford ☐

Educational

Commercial

Trading post ☐

Store ☐

Tavern/inn ☐

Military

Battlefield ☐

Fortification ☐

Encampment ☐

Townsite

Religious

Church/mtg house ☐

Ch support bldg ☐

Burial area

Cemetery ☐

Sepulchre ☐

Isolated burial ☐

Bldg or foundation ☒

Possible Structure ☐

Post-in-ground ☐

Frame-built ☐

Masonry ☒

Other structure ☐

Slave related

Non-domestic agri

Recreational

Midden/dump ☒

Artifact scatter ☐

Spring or well ☐

Unknown ☐

Other context ☐

Interpretive Sampling Data:

Prehistoric context samples

Soil samples taken ☐

Flotation samples taken ☐

Other samples taken ☐

Historic context samples

Soil samples taken ☐

Flotation samples taken ☒

Other samples taken ☐



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Diagnostic Artifact Data:

Projectile Point Types	
Clovis	<input type="text"/>
Hardaway-Dalton	<input type="text"/>
Palmer	<input type="text"/>
Kirk (notch)	<input type="text"/>
Kirk (stem)	<input type="text"/>
Le Croy	<input type="text"/>
Morrow Mntn	<input type="text"/>
Guilford	<input type="text"/>
Brewerton	<input type="text"/>
Otter Creek	<input type="text"/>
Koens-Crispin	<input type="text"/>
Perkiomen	<input type="text"/>
Susquehanna	<input type="text"/>
Vernon	<input type="text"/>
Piscataway	<input type="text"/>
Calvert	<input type="text"/>
Selby Bay	<input type="text"/>
Jacks Rf (notch)	<input type="text"/>
Jacks Rf (pent)	<input type="text"/>
Madison/Potomac	<input type="text"/>
Levanna	<input type="text"/>

Prehistoric Sherd Types

Marcey Creek	<input type="text"/>	Popes Creek	<input type="text"/>	Shepard	<input type="text"/>	Keyser	<input type="text"/>
Dames Qtr	<input type="text"/>	Coulbourn	<input type="text"/>	Townsend	<input type="text"/>	Yeocomico	<input type="text"/>
Selden Island	<input type="text"/>	Watson	<input type="text"/>	Minguannan	<input type="text"/>	Monongahela	<input type="text"/>
Accokeek	<input type="text"/>	Mockley	<input type="text"/>	Sullivan Cove	<input type="text"/>	Susquehannock	<input type="text"/>
Wolfe Neck	<input type="text"/>	Clemson Island	<input type="text"/>	Shenks Ferry	<input type="text"/>		
Vinette	<input type="text"/>	Page	<input type="text"/>	Moyaone	<input type="text"/>		
				Potomac Cr	<input type="text"/>		

Historic Sherd Types

Earthenware	Ironstone	<input type="text"/>	Staffordshire	<input type="text"/>	Stoneware	
Astbury	Jackfield	<input type="text"/>	Tin Glazed	<input type="text"/>	English Brown	<input type="text"/>
Borderware	Mn Mottled	<input type="text"/>	Whiteware	<input type="text"/>	Eng Dry-bodie	<input type="text"/>
Buckley	North Devon	<input type="text"/>	Porcelain	<input type="text"/>	Nottingham	<input type="text"/>
Creamware	Pearlware	<input type="text"/>			Rhenish	<input type="text"/>
					Wt Salt-glazed	<input type="text"/>

All quantities exact or estimated minimal counts

Other Artifact & Feature Types:

Prehistoric Artifacts	
Flaked stone	<input type="text"/>
Ground stone	<input type="text"/>
Stone bowls	<input type="text"/>
Fire-cracked rock	<input type="text"/>
Other lithics (all)	<input type="text"/>
Ceramics (all)	<input type="text"/>
Rimsherds	<input type="text"/>
Other fired clay	<input type="text"/>
Human remain(s)	<input type="text"/>
Modified faunal	<input type="text"/>
Unmod faunal	<input type="text"/>
Oyster shell	<input type="text"/>
Floral material	<input type="text"/>
Uncommon Obj.	<input type="text"/>
Other	<input type="text"/>

Prehistoric Features

Mound(s)	<input type="text"/>	Storage/trash pit	<input type="text"/>
Midden	<input type="text"/>	Burial(s)	<input type="text"/>
Shell midden	<input type="text"/>	Ossuary	<input type="text"/>
Postholes/molds	<input type="text"/>	Unknown	<input type="text"/>
House pattern(s)	<input type="text"/>	Other	<input type="text"/>
Palisade(s)	<input type="text"/>		
Hearth(s)	<input type="text"/>		
Lithic reduc area	<input type="text"/>		

Lithic Material

Fer quartzite	<input type="text"/>	Sil sandstone	<input type="text"/>
Jasper	<input type="text"/>	Chalcedony	<input type="text"/>
Chert	<input type="text"/>	Ironstone	<input type="text"/>
Rhyolite	<input type="text"/>	Argilite	<input type="text"/>
Quartz	<input type="text"/>	Steatite	<input type="text"/>
Quartzite	<input type="text"/>	Sandstone	<input type="text"/>
European flint	<input type="text"/>	Basalt	<input type="text"/>
Unknown	<input type="text"/>	Other	<input type="text"/>

☒ Dated features present at site

Numerous features containing diagnostic historic artifacts.

Historic Artifacts	
Pottery (all)	<input type="text"/>
Glass (all)	<input type="text"/>
Architectural	<input type="text"/>
Furniture	<input type="text"/>
Arms	<input type="text"/>
Clothing	<input type="text"/>
Personal items	<input type="text"/>
Tobacco related	<input type="text"/>
Activity item(s)	<input type="text"/>
Human remain(s)	<input type="text"/>
Faunal material	<input type="text"/>
Misc. kitchen	<input type="text"/>
Floral material	<input type="text"/>
Misc.	<input type="text"/>
Other	<input type="text"/>

Historic Features

Privy/outhouse	<input type="text"/>	Depression/mound	<input type="text"/>	Unknown	<input type="text"/>
Const feature	<input type="text"/>	Well/cistern	<input type="text"/>	Burial(s)	<input type="text"/>
Foundation	<input type="text"/>	Trash pit/dump	<input type="text"/>	Railroad bed	<input type="text"/>
Cellar hole/cellar	<input type="text"/>	Sheet midden	<input type="text"/>	Earthworks	<input type="text"/>
Hearth/chimney	<input type="text"/>	Planting feature	<input type="text"/>	Mill raceway	<input type="text"/>
Postholes/molds	<input type="text"/>	Road/walkway	<input type="text"/>	Wheel pit	<input type="text"/>
Paling ditch/fence	<input type="text"/>				

All quantities exact or estimated minimal counts

Radiocarbon Data:

Sample 1:	<input type="text"/>	+/-	<input type="text"/>	years BP	Reliability	Sample 2:	<input type="text"/>	+/-	<input type="text"/>	years BP	Reliability	Sample 3:	<input type="text"/>	+/-	<input type="text"/>	years BP	Reliability
Sample 4:	<input type="text"/>	+/-	<input type="text"/>	years BP	Reliability	Sample 5:	<input type="text"/>	+/-	<input type="text"/>	years BP	Reliability	Sample 6:	<input type="text"/>	+/-	<input type="text"/>	years BP	Reliability
Sample 7:	<input type="text"/>	+/-	<input type="text"/>	years BP	Reliability	Sample 8:	<input type="text"/>	+/-	<input type="text"/>	years BP	Reliability	Sample 9:	<input type="text"/>	+/-	<input type="text"/>	years BP	Reliability

☐ Additional radiocarbon results available



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Unknown ☐

External Samples/Data:

Collection curated at MAC

☐ Additional raw data may be available online

Summary Description:

Site 18FR333 is the immediate vicinity surrounding a mid 19th century iron furnace stack known as "Isabella" and its associated casting house. The iron furnace is also known as "Stack 2", although it is likely the third blast furnace built in the Catoctin area (see synopsis report for 18FR29). The site is situated in the Catoctin Furnace Historic District along US Route 15 in Frederick County, Maryland and falls within Cunningham Falls State Park. It is also subsumed within the broader Catoctin Furnace site or 18FR29. Historical background on the site is provided in the 18FR29 synopsis report. This report deals solely with the details of archeological excavations conducted at 18FR333.

The first documented archeological fieldwork done in the area was conducted under the auspices of the Works Progress Administration (WPA) as part of depression-era relief work in 1936. The fieldwork involved excavation of a 1.2192 meter (4 ft) wide trench 3.6576 meters (12 ft) east of the Isabella stack and parallel to its face. The trench continued north to the north wall of the presumed casting house. The field crew that initially began work at the site was not trained in archeology and work had to be halted shortly after it began until a trained archeologist could be hired as a foreman to oversee the dig. No report of the excavation findings was ever published and the whereabouts of any collection is unknown. Archeological work was confined to pedestrian surveys, mostly in the early 1970s, until 1975 when formal test excavations were conducted within the confines of 18FR333.

Due to the impending dualization of US Route 15, a thorough archeological survey was conducted throughout the broader Catoctin Furnace area. Since archeological deposits of known historical value were almost certainly situated in the vicinity of the Isabella furnace stack, a decision was made to move immediately forward with Phase II testing in this area in 1975. Test excavations were designed to document the remains of the associated casting house in preparation for its reconstruction as an interpretive feature of the Cunningham Falls State Park. The researchers documented multiple sand layers and the presence of a subfloor drainage system. The decision was made at that time to designate it as a separate site within 18FR29; 18FR333.

Only an estimated 15% of the site, or 34.8 square meters was excavated in 1975. A grid of 1.524 meter (5 ft) squares was placed over the casting shed site with a datum established 5.08 cm (2 in) north of the southeast corner of the furnace stack. Excavation was conducted in a series of 4 major trenches, with tests opened up or expanded when major features were encountered. Eighteen features, 28 major strata, and numerous artifacts and cultural materials were encountered. The finds were recognized as associated with iron manufacturing processes of the 19th century. Major finds included the furnace hearth, the cinder notch (for pouring out slag), the iron notch for releasing the molten metal, two parallel troughs or gutters running down a slope in the mouth of the furnace to the casting floor, upright stakes and gutter plates, a clay lining, and a pig iron ingot.

At the turning point of the iron notch trough a cinder basin and wharf were found for storing the slag. Trenching from the 1936 WPA excavation was apparent in this area. The troughs were filled with red sand, oxidized by the hot iron, and covered by a layer of black coal cinders. This was interpreted as being indicative of a later period of the furnace's use, when the casting sand was no longer being used. Foundry work may have been conducted here, in which molten iron would be ladled from the cinder notch rather than run through the troughs to molds. The casting house floor revealed a number of sand floors superimposed one on the other and interlaced with red sand lenses, dark sand, and cinders. These were interpreted as the casting floor with the pig iron molds and runners seen in the red and darker colored sands. While charcoal fragments were plentiful in the lower floors, coke and coal cinders came from later levels – suggesting a change in fuel for greater efficiency. The center of the casting house floor was occupied by a large basin which was interpreted as a hauling area for the removal of the pig iron ingots. A "trapeze and tongue" iron artifact was conveniently found on the basin floor and interpreted as "hauling gear". Under the basin and the sand floors was a fieldstone covered drain, believed to be for draining off the water used to cool the newly molded pig iron prior to removal. Evidence of a curved trench cutting through two sandy soil strata at the base of the excavation might have been made to install or repair the drain. The central basin was opened when the casting shed was dismantled and contained bricks, glass, machine parts, and iron artifacts used as fill in leveling the site early in the 20th century. One of the three rafter pole footings at the south side of the shed was excavated, revealing a square patch-work pedestal of field stones. The footing of the first east wall section was also excavated. The south end of the second east wall section (restored) was lacking footing. Since the planned restoration (with footing) of this second section of the east wall seems to agree with a late photograph of the shed, the east wall may have had several phases in its construction or a footing was considered unnecessary earlier on. Evidence of the WPA dig was seen in the east section of the site interior with the southeast corner of the shed possibly excavated. A low ridge at the outside of the east wall was sectioned to show six superimposed strata of sand, red and brown sand, lime, and humus. This was interpreted as a storage area for refuse from the shed floor and/or for supplies.

Artifacts recovered during the excavations include 719 activity items related to iron working, 280 architectural objects, 42 kitchen-related items, 19 miscellaneous artifacts, and a single arms-related object. The activity-related objects include 5 chunks of formed sand, 234 pieces of slag, 1 sample of slag ash, 2 cinder slag fragments, 176 vitrified conglomerate materials (including stone, slag, etc.), 2 pieces of burnt clay, 3 pieces of ochre, 47 charcoal pieces/samples, 68 fragments of coke, 2 pieces of coal, 43 fragments of iron ore, an iron pig, 65 iron objects (tools, furnace products, gates, scrap, etc.), 63 fragments of iron (mostly sheet), a metal bar, 4 pieces of metal sheet, a metal hook, a large metal tool (interpreted as a pig iron "hauler"), a pick axe collar, a piece of copper sheathing, a brass collar, and 2 lead tubes. The 280 architectural artifacts were 84 masonry-related objects (63 bricks or brick fragments, 14 pieces of firebrick, 4 pieces of mortar, 3 pieces of architectural stone), 2 fragments of window glass, a cast iron pipe, 177 hardware pieces (24 square nails, 122 miscellaneous nails, 6 wire nails, 8 iron spikes, 9 iron screws, 2 nuts, and 5 screws), 16 lime fragments, and a wood plank. The kitchen-related artifacts were a tin-glazed sherd, 1 piece of ironstone, 2 fragments of redware, and 38 bottle fragments. The one arms-related artifact is a cap from a shotgun shell. The miscellaneous objects recovered from the site were a fragment of red clay, 15 pieces of stone, 2 wood fragments, and a piece of chalk.

Researchers returned to the site in 1976 to conduct additional test excavations around the base of a nearby historic retaining wall system, preparatory to the installation of shoring cleats to support buttresses for the retaining wall. Their excavations revealed details of the engine house associated with the Deborah Stack (a.k.a. Stack 3). See the synopsis report for 18FR334 for more details regarding this portion of the excavation. The researchers also encountered what they interpreted to be the remains of a bellows house and waterwheel pit. Excavation in the area north of the Isabella stack suggested that this area might enclose the almost entirely buried remains of the 1787 Stack. A total of six test squares were excavated in the footprint areas of the future shoring cleats. Unit sizes were typically between 1.2192 and 1.524 meters (4 and 5 ft) wide, and were excavated to a depth of 61-91 cm (2-3 ft). Each was approximately 2.9 meters (9½ ft) out from the wall where the cleats were to be installed. Four of the test units were placed along the retaining wall to the west of Isabella (in the vicinity of the bellows and wheel pit) and two were placed along the retaining wall north of Isabella (where the 1787 Stack was possibly located).

Three of the test units to the west of Isabella revealed a slag pile over clay fill. One test revealed massive flat stones placed in close proximity to one another, but with spaces between them. They resemble (in both size and layout) stones found beneath the Isabella stack casting house which were used as a stone



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Unknown ☐

drain. A race course with water valve is seen directly above this feature on the top of the retaining wall. An overshot wheel is believed to be the device which was used to operate bellows providing air to draft the furnaces. The massive stones were, then, part of the drainage system for the wheel house. Large wall stones are seen in the immediate vicinity; a likely foundation in support of the waterwheel and bellows. It is believed that the waterwheel would have supplied power to both the 1787 Stack and Isabella.

Locals contend that the old charcoal stack built in 1787 by the Johnsons (the actual second stack built at Catoctin – see synopsis report for 18FR29) was located just to the north of the Isabella stack. Two test units were excavated in this area. However, researchers quickly realized that the entire area was filled with rubble caused by the breakdown of the retaining wall. The researchers contended that if the 1787 Stack was located in this area, then the old stack is essentially sealed by the rubble presenting a promising avenue for future research. At the time of the cleat installations, further excavation was deemed unnecessary.

Artifacts recovered from these tests include 27 activity items (24 pieces of slag, 2 conglomerates of vitrified material, and a piece of burnt clay), 4 architectural objects (1 brick fragment, 1 firebrick, and 2 pieces of mortar), 1 personal item (a plastic eyeglass frame), and 4 miscellaneous objects (a piece of red clay and 3 rocks).

Additional Phase I work and archeological monitoring of the site have taken place since the late 1970s, however, interpretations of the site have changed little in that time. The site's most significant component is the mid 19th century iron furnace and casting house. Data obtained during these excavations were used in the repair of the furnace and reconstruction of the casting house for interpretation. Other significant components include the waterwheel house and probable location of bellows for Isabella and the 1787 Stack. One promising avenue for future research at 18FR333 is an examination of the area just north of the Isabella stack. It is believed that the base of the 1787 Stack may be buried here beneath rubble from the old retaining wall.

External Reference Codes (Library ID Numbers):

00006001, 00006002, 00006046